



Coal Mining Risk Assessment for Proposed at The Woodhouse, Lockwood Road, Cheadle, ST10 4QU.

Prepared for

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Summary

This report consists of a coal mining risk assessment produced in support of planning application for a car park and cabin at Woodhouse, Lockwood Road, Cheadle, ST10 4QU.

Following a review of available historic mapping, geological and purchased Coal Mining Data a risk assessment of the potential risk of mining activity on the proposed development has been undertaken.

It has been concluded that the risk posed to the proposed extension is negligible.



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Introduction

Martin Environmental Solutions has been commissioned, to carry out a coal mining risk assessment report in relation to a proposed car park extension and cabin Woodhouse, Lockwood Road, Cheadle, ST10 4QU.

Aims and Objectives of the report

The aims and objectives of this report are as follows:

- Present a desk-based review of all available information on the coal mining issues which are relevant to the application site;
- Use that information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;
- Set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development, and;
- Demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

Scope of works

This report has been written with regard to *'The Coal Authority, Risk based approach to development management, Guide for Developers, 2017'*

The Site:

Site Address: Woodhouse, Lockwood Road, Cheadle, ST10 4QU.

Grid Reference: 402632, 344867

An aerial photograph of the site is included in Figure 1.

Current Site use:

The site consists of a grassed area on the edge of the existing larger healthcare site. The wider site lies to the north with agricultural fields and a woodland to the east and south.



Research

Sources of Information

The assessment has been based upon the following sources of information;

- A Coal Mining Report, attached in Appendix A.
- Published geological maps of the area from British Geological Survey (BGS),
- Historic Ordnance Survey Plans;
- The Coal Authority interactive maps

Identification and assessment of site-specific coal Mining

Historic Mapping:

A review of the historic ordnance survey maps has been undertaken from 1848 through to present day maps, the findings are summarised below:

Year	Findings
1885-1903	Properties are identified on the wider site. The area is agricultural in nature. The woodland is identified to the east and beyond to the southeast. A number of old mine shafts are identified to the west 1.5Km away and more to the south of Cheadle.
1937-61	The larger site has been developed further, no significant changes to the area
1988	No significant changes
2002-present	No significant changes

Coal Mining Report

The Coal Authority have confirmed that there are no past mining records on site or within the zone of influence identified as 0.7 times the depth of the working. However, the Coal Authority believe there to be coal close to the surface, this coal may have been worked at some point in the past but there are no records on any of the historic maps dating from 1880-present day, it is considered likely that shallow workings are present within 30m depth.

In addition, the Coal authority have identified a mine shaft located just off the boundary of the site, although this contradicts the available historical maps. The site is also located within an area identified on the coal authorities abandoned mine plan catalogue, although within an area covering most of the Cheadle area and beyond.



The mine entry records include the salient points:

Coal Shaft - <20m southeast reference 402344-003
Shaft diameter 2m
Depth unknown
Angle unknown

An outcrop to the King coal seam exists 24.3m to the southeast, this outcrop is considered to be workable. It runs east -west stretching as far as Lockwood Road to the east and approx. 660m to the west. The 'King' coal seam is one of the deepest in the area and around 3ft thick.

No faults, fissures, opencast mines, or mine tips have been identified in the vicinity.

No licenses have been issued for any mining within 200m of the site and no notices have been issued stating that the land is at risk of subsidence.

There have been no site investigations of mining works within 50m of the site, and no recorded remediation works. The Coal authority have received no claims for damage caused by mine workings within 50m of the site and no preventive works have been requested.

There are no records of mine gas releases within 500m of the site, or mine water treatment schemes.

The coal authority have identified the potential for shallow coal workings, a coal seam to the south and records of a mine shaft on the boundary of the site.

Historical maps available for the area covering the years 1880, 1890, 1899-1901, 1924, 1937, 1948, 1955, 1957, 1970, 1976, 1988, 2000-present. No records of any mining activities are recorded on these maps in the immediate vicinity of the site and the original building now forming the larger site was present in 1880.

Nearby borehole records to the west have identified a shallow coal seam of approx. 0.8m at a depth of 11.5-12m. No other coal seams are identified down to 30m bgl. This does not appear to have been worked and there is sufficient cover (10 times the seam thickness) to allow construction to proceed.

Onsite geotechnical investigations have revealed a 0.15m coal seam at a depth of 3m bgl. Below 3.65m siltstone was encountered with ground water at 3.17m. Again, sufficient rock cover existing to allow the construction on this basis, however deeper investigations were not undertaken at the time.



Risk Assessment

This Risk Assessment comprises a desk-based review of all available information on the coal mining issues which are relevant to the application site.

This includes:

Interpretation of information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues.

The Coal Mining Risk Assessment is summarised below

Coal Mining Risk Assessment	Yes/No	Risk Assessment
Recorded underground Coal mining at Shallow Depth (<30m)	No	Low
Recorded Underground Coal Mining at Shallow Depth (>30m)	Yes	High
Unrecorded Underground Coal Mining at Shallow Depth (<30m)	Yes	High
Mine Entries (Shaft / Adits)	Yes	High
Coal Mining Geology – Fractures / Fissures	No	Low
Recorded Gas Emissions	No	Low
Recorded Mining Surface Hazard (shaft)	Yes	High
Surface Mining (opencast)	No	Low

Unrecording shallow (<30m depth) mine workings area expected on the 'King' coal seam to the southeast. A shaft has been identified within 20m of the boundary to the east.

In accordance with the Coal Authority requirements for the assessment of land stability and in consideration of the table above and technical document C758D a potential risk has been identified with respect to the presence of the identified mine shaft, presumed underground mining in the vicinity and potential unrecorded shallow coal workings which could theoretically result in a future subsidence event at the surface.



It is recommended that further investigation be undertaken, to ensure the site will be suitable for the intended development, a car park.

Clarity on the presence of the mine shaft needs to be sought to establish if shaft does exist and its exact location in relation to the site.

In addition, an investigation of any potential shallow mining under the area of the development is required. This can be achieved through 3-5 suitable boreholes undertaken on site.

Conclusion

In light of the above assessment, it is likely that the Coal Authority will require a 3-5 No. rotary open holes to be completed across the site with the potential for further boreholes should any of these indicate shallow workings.

In the event that shallow mine workings are identified at a depth that could result in a theoretic risk to ground stability of the future development, these workings could be consolidated and stabilised in accordance with the Coal Authority Permissions Process and industry best practise as outlined in C758D.

It is therefore concluded that while further intrusive investigations are required to demonstrate the absence of any risk to the built environ, any future stability issues can be addressed during development. It is therefore our opinion that the land is suitable for the intended use and that all future works can be dealt with using a suitably worded planning condition.

Figure 1 – Aerial Photograph





Appendix A – Coal Mining Report